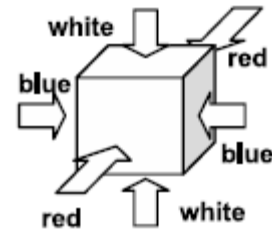

3. Bouncing Dice

Program Name: Bouncing.java

Input File: bouncing.dat

You are given a single six-sided die as shown on the right. Two of the opposite sides are colored white, two are colored blue, and two are colored red as shown in the picture to the right.



You are to write a simulation that will determine the color that is facing upward after a given number of "rolls". At the beginning of each simulation, the die will be positioned as shown at the right:

- White sides are on the top and bottom.
- Blue sides are on the left and right.
- Red sides are on the front and back.

For each simulation, you will need to construct one object of the type `java.util.Random`. This class allows you to specify the seed for the random number generator. For a given seed, the order of the random numbers is always the same.

For each simulation, you will need three random numbers: `r1`, `r2` and `r3`:

- The first random number, `r1`, will be a number between 1 and 10, inclusive, and will determine the number of times the direction will change once the die is rolled.
- For each of `r1` actions, there will be two random numbers created, `r2` and `r3`.
- `r2` will be a number between 1 and 4, inclusive, and will determine the direction that the die will roll:
 - 1 = forward (red would be up on the first roll)
 - 2 = backward (red would be up on the first roll)
 - 3 = left (blue would be up on the first roll)
 - 4 = right (blue would be up on the first roll)
- `r3` will be a number between 1 and 5, inclusive, and will determine the number of times the die will roll in the direction determined by `r2`.

The simulation will take the original die, roll it in direction `r2` `r3` number of times then, from that result, repeat the process `r1` number of times.

Input

The first line of input will contain a single integer `n` that indicates the number of simulations to follow. Each of the following `n` lines will contain a positive long which will be the seed for the random object in the simulation.

Output

For each simulation, you will print the color that will be on the top side of the die at the conclusion of the simulation. The color that will be printed will be RED, WHITE, or BLUE.

Example Input File

```
2
12354643223452
76654213645
```

Example Output to Screen

```
WHITE
RED
```

Random numbers generated: For each seed, the first number is `r1`. The remaining numbers are alternating `r2` and `r3`.

```
12354643223452: 10  3 1 4 3 3 5 4 2 4 1 1 5 2 5 3 1 1 2 3 5
76654213645: 6   2 4 1 4 4 5 3 4 2 5 4 2
```